

SATELLITE METHODS AND STRUCTURES FOR IMPROVED
ANTENNA POINTING AND WIDE FIELD-OF-VIEW
ATTITUDE ACQUISITION

ABSTRACT OF THE DISCLOSURE

5 Methods and structures are provided for reducing pointing errors ζ
of satellite antennas and for generating broad field-of-view satellite
attitude acquisition patterns. In one method embodiment, satellite
transmit beams have estimated pointing attitudes β and are transmitted
to overlap on a ground-based receiving terminal which has a known
terminal location λ and which measures received signal strengths α .
10 Pointing errors ζ of the transmit beams are then determined from the
estimated pointing attitudes β , the terminal location λ and the signal
strengths α and the pointing errors ζ are subsequently reduced by
revising the pointing attitudes β . Other method embodiments utilize
known signal-strength functions and antenna signals with known signal
parameters such as frequencies and/or modulations.